

What is smart grid?

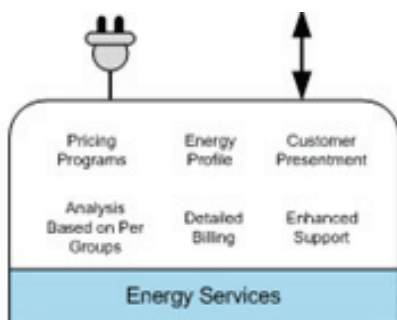
Answering this question is like to trying to describe 25 years ago the end-state of the internet. Consider for a moment the far-reaching impact of the “information superhighway.” Few could have predicted the impact of e-mail, e-commerce, search engines, wireless communication and mobile navigation systems. True enough, a few visionaries did recognize the opportunity and they helped design the future we all enjoy, and often take for granted.

Like those early designers of the information superhighway, TVA understands the promise of a communications network that delivers the smart grid to homes and businesses. The features and benefits of the smart grid can be defined, but its end state will be ever evolving.

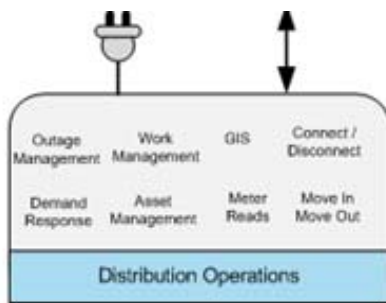
The GridWise Alliance defined the smart grid as, “a dynamic, ubiquitous two-way communication system involving the entire grid that allows for greater choice by every stakeholder on the grid.” The graphic here displays this definition of an “energy network.”

The primary goal for smart grid in the Valley is to deliver the optimal amount of information and load control for customers, distributors, and grid operations to change behavior in a way that reduces system demands and costs, and increases energy efficiency. Smart grid promotes societal benefits like reduced emissions, lower energy costs, and greater flexibility to accommodate new renewable distributed energy sources. TVA is focused on piloting smart metering and other smart grid technologies that will enable consumers to be more active in their power consumption through load control and energy monitoring.

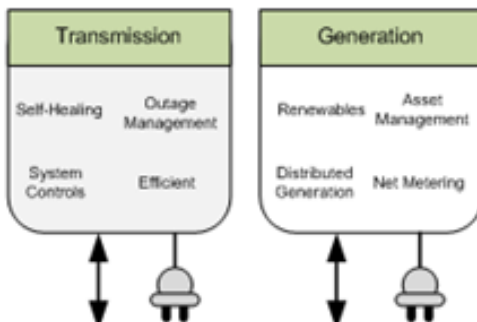
“Digital technologies have transformed other industries ... A similar change has not yet happened for the electric grid,” Suedeon G. Kelly, Commissioner of the Federal Energy Regulatory Commission (Testimony before the United States Senate Committee on Energy and Natural Resources, March 3, 2009).



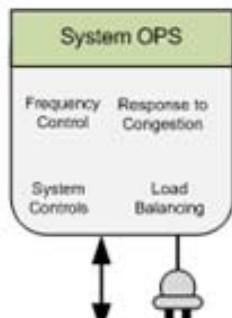
Smart grid enables the right information to the right people at the right time to enhance customer satisfaction.



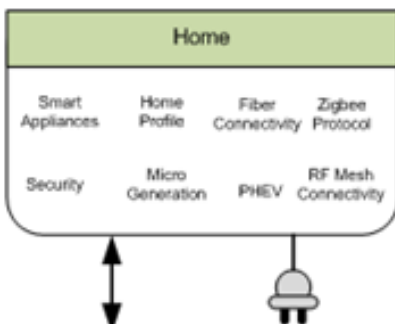
The distribution network continually models the use of the system and is better able to manage and correct problems to promote efficient & reliable service.



Transmission and Generation monitors and adjusts resources to ensure a continuous supply of energy.



System operations receives communication from the grid community and sends data, such as price signals, back to all participants.



These applications receive signals to help make “smart” decisions regarding energy use. Ultimately, their decisions are communicated back to the grid.

What is Smart Grid?

